CANADIAN JOURNAL OF FOREST RESEARCH, **VOLUME 2, 1972**

AUTHOR INDEX

Armson, K. A. See Shea, S. R. Balderton, M. B. Photo-electric measurement of Douglas fir needle area, 374–376.

Barnett, J. P. Seedcoat influences dormancy of Loblolly pine seeds, 7-10.

Barnett, P. E. See Farmer, R. E., Jr.

Baskerville, G. L. Use of logarithmic regression in the estimation of plant biomass, 49-53.

Bell, S. See Stafford, L. O. Bernier, B., Brazeau, M., and Winget, C. H. Gaseous loss of ammonia following urea application in a balsam fir forest, 59-62.

Bohaychuk, W. P. See Whitney, R. D.
Bonnor, G. M. Cost of a small forest inventory, 45-48.
Borger, G. A., and Kozlowski, T. T. Early periderm ontogeny in Fraxinus pennsylvanica, Ailanthus altissima, Robinia pseudocaccia, and Pinus resinosa seedlings, 135-143.

Paragraph C. A. and Kozlowski, T. T. Effects of justing designs, 135-143.

Borger, G. A., and Kozlowski, T. T. Effects of water deficits on first periderm and xylem develop-

ment in Fraxinus pennsylvanica, 144-151.

Borger, G. A., and Kozlowski, T. T. Effects of light intensity on early periderm and xylem develop-

ment in Pinus resinosa, Fraxinus pennsylvanica, and Robinia pseudoacacia, 190-197.

Borger, G. A., and Kozlowski, T. T. Effects of temperature on first periderm and xylem development in Fraxinus pennsylvanica, Robinia pseudoacacia, and Ailanthus altissima, 198-205.

Boyer, M. G. See Navratil, S.

Boyle, J. R. See Lambert, J. L. Boyle, J. R., and Ek, A. R. An evaluation of some effects of bole and branch pulpwood harvesting on site macronutrients, 407-412.

Brazeau, M. See Bernier, B.

Briant, M. A. See Whitney, R. D. Brink, V. C. See Dodd, C. J. H. Brix, H. Nitrogen fertilization and water effects on photosynthesis and earlywood-latewood pro-

duction in Douglas-fir, 467-478.

Cerezke, H. F. Effects of weevil feeding on resin duct density and radial increment in lodgepole pine,

Cerezke, H. F. Observations on the distribution of the spruce bud midge (Rhabdophaga swainei Felt) in black and white spruce crowns and its effect on height growth, 69-72.

Chaney, W. R., and Leopold, A. C. Enhancement of twig abscission in white oak by ethephon, 492-495.

Chase, T. See Tattar, T. A.

Clements, J. R., Fraser, J. W., and Yeatman, C. W. Frost damage to white spruce buds, 62-63. Clements, J. R. Stemflow in a multi-storied aspen community, 160-165.

Daniel, T. W., and Schmidt, J. Lethal and nonlethal effects of the organic horizons of forested soils

on the germination of seeds from several associated conifer species of the Rocky Mountains, 179-184.

DeBell, D. S. See Heilman, P. E. Demaerschalk, J. P. Conversions of taper and volume equations from the English to the metric system, 372-374

Dodd, C. J. H., McLean, A., and Brink, V. C. Grazing values as related to tree-crown covers, 185-

Durzan, D. J., Pitel, J., and Ramaiah, P. K. Acid soluble nucleotides and ribonucleic acids from germinating jack pine seeds, 206-216. Ebell, L. F. Cone induction response of Douglas fir to form of nitrogen fertilizer and time of treat-

ment, 317-326.

Ebell, L. F. Cone production and stem growth response of Douglas fir to rate and frequency of nitrogen fertilization, 327-338. Edwards, D. G. W., and Olsen, P. E. R-55 rodent repellent: effect on germination in Douglas-fir and

western hemlock, 256-263.

Eis, S. Root grafts and their silvicultural implications, 111-120. Eis, S., and Long, J. R. Lateral root pruning of Sitka spruce and western hemlock seedlings, 223-

Eis, S., and Inkster, J. White spruce cone production and prediction of cone crops, 460-466.

Ek, A. R. See Boyle, J. R.

Etter, H. M. Effect of nitrogen nutrition upon sugar content and dry weight of juvenile lodgepole pine and white spruce, 434-440. Farmer, R. E., Jr., and Barnett, P. E. Precocious flowering of black cherry related to altitudinal

source, 57-58.

Feret, P. P. Peroxidase isoenzyme variation in interspecific elm hybrids, 264-270. Foster, N. W., and Gessel, S. P. The natural addition of nitrogen, potassium, and calcium to a Pinus banksiana Lamb. forest floor, 448-455.

Fraser, J. W. See Clements, J. R. Gardner, W. R. See Lambert, J. L. Gessel, N. W. See Foster, N. W.

Golding, D. L., and Stanton, C. R. Water storage in the forest floor of subalpine forests of Alberta,

Hall, R., Hofstra, G., and Lumis, G. P. Effects of deicing salt on eastern white pine: foliar injury, growth suppression, and seasonal changes in foliar concentrations of sodium and chloride, 244-249. Heaman, J. C., and Owens, J. N. Callus formation and root initiation in stem cuttings of Douglasfir (Pseudotsuga menziesii (Mirb.) Franco), 121-134.

Heger, L. Range as a measure of dispersion in forest sampling, 40-44.

Heger, L. Erratum: Range as a measure of dispersion in forest sampling, 380.

Heilman, P. E., Peabody, D. V., Jr., DeBell, D. S., and Strand, R. F. A test of close-spaced, shortrotation culture of black cottonwood, 456-459.

Hocking, D. See Mitchell, D. I.

Hoff, R. J., and McDonald, G. I. Resistance of Pinus armandii to Cronartium ribicola, 303-307. Hofstra, G. See Hall, R.

Inkster, J. See Eis, S.
Honer, T. G. A height-density concept and measure, 441–447.

Isebrands, J. G. See Larson, P. R. Jaeger, T. A. See Pnevmaticos, S. M. Jett, J. B. See Zobel, B. J.

Kay, W. C. See Mitchell, D. L. Kellogg, R. M. See Mitchell, K. J. Kellogg, R. M. See Steucek, G. L. Kozak, A. See Sastry, C. B. R

Kozlowski, T. T. See Borger, G. A. Kozlowski, T. T. See Borger, G. A. Kozlowski, T. T. See Borger, G. A. Kozlowski, T. T. See Borger, G. A.

Lambert, J. L., Boyle, J. R., and Gardner, W. R. The growth response of a young pine plantation to weed removal, 152-159

L'Armee, M. T. de A tree platform for crown sampling, 166-167.

Larson, P. R., and Isebrands, J. G. The relation between leaf production and wood weight in firstyear root sprouts of two Populus clones, 98–104. Leopold, A. C. See Chaney, W. R. Lessard, R. A. See Skutt, H. R.

Long, J. R. See Eis, S.

Lowe, L. E. Aspects of chemical variability in forest humus layers under a mature western hemlock western red cedar stand, 487-489.

Lumis, G. P. See Hall, R.

Manley, S. A. M. The occurrence of hybrid swarms of red and black spruces in central New Brunswick, 381-391.

Manville, J. F. See Troughton, G. E. McDonald, G. I. See Hoff, R. J. McLean, A. See Dodd, C. J. H.

Mellor, G. E., and Tregunna, E. B. The relationship between leaf area and leaf dry weight of three conifer species grown on three sources of nitrogen, 377-379. Meng, C. H. Tree volume estimates as affected by errors due to sampling, volume equation, and

Mitchell, D. L., Hocking, D., and Kay, W. C. Extruded peat cylinders: their physical characteristics as affecting tree seedling growth and greenhouse drought tolerance, 479-486. Mitchell, K. J., and Kellogg, R. M. Distribution of area increment over the bole of fertilized Douglas

Morrison, I. K. Variation with crown position and leaf age in content of seven elements in leaves of *Pinus banksiana* Lamb., 89-94.

Muir, J. A. Increase of dwarf mistletoe infections on young lodgepole pine, 413-416.

Navratil, S., and Boyer, M. G. Ultrastructural changes in leaf tissues of Populus deltoides spp. angulata Ait. infected with poplar mosaic virus, 308-312.

Ofosu-Asiedu, A. See Smith, R. S Olsen, P. E. See Edwards, D. G. W Owens, J. N. See Heaman, J. C.

Payandeh, B. A Monte Carlo test of Holgate's new randomness tests, 65-68.

Peabody, D. V., Jr. See Heilman, P. E. Perem, E. See Pnevmaticos, S. M.

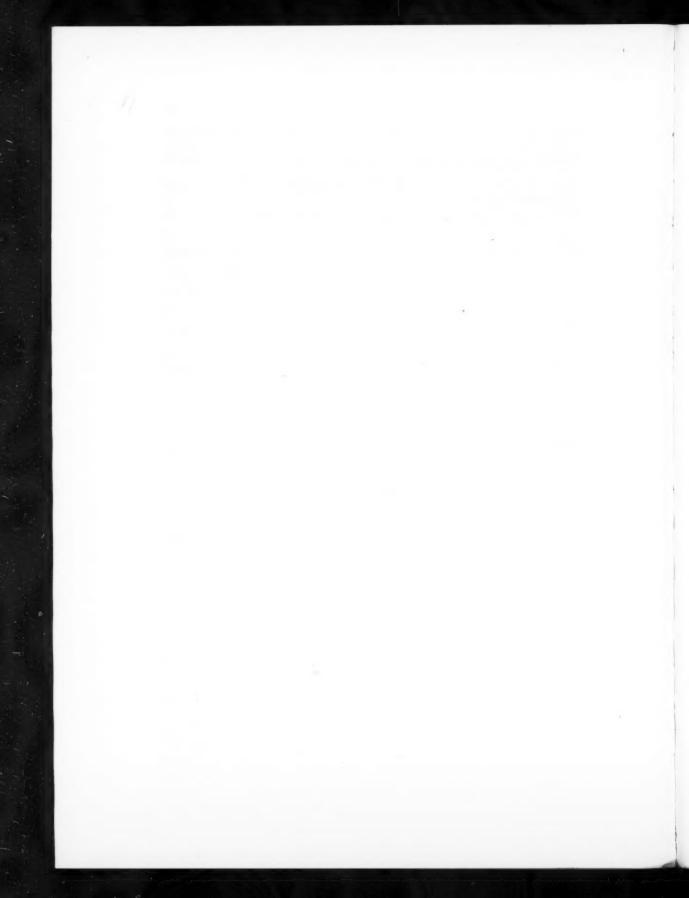
Piesch, R. F. Cone and seed production of one-year-old rooted cuttings of western hemlock, 370-371. Pitel, J. See Durzan, D. J.

Pnevmaticos, S. M., Jaeger, T. A., and Perem, E. Factors influencing the weight of black spruce and balsam fir stems, 427-433.
 Pollard, D. F. W. Above-ground dry matter production in three stands of trembling aspen, 27-33.

Powell, J. M. Seasonal and diurnal periodicity in the release of Cronartium comandrae aeciospores from stem cankers on lodgepole pine, 78-88

- Radwan, M. A. Differences between Douglas-fir genotypes in relation to browsing preference by black-tailed deer, 250-255.
- Ramaiah, P. K. See Durzan, D. J. Richardson, K. S., and van der Kamp, B. J. The rate of upward advance and intensification of dwarf mistletoe on immature western hemlock, 313-316.
- Ronco, F. Overwinter food reserves of potted Engelmann spruce seedlings, 489-492.
- Sastry, C. B. R., Kozak, A., and Wellwood, R. W. A new approach for the evaluation of wood from fertilized trees, 417–426.

 Schmidt, J. See Daniel, T. W.
- Shea, S. R., and Armson, K. A. Stem analysis of jack pine (Pinus banksiana, Lamb.): techniques and concepts, 392-406.
- Shigo, A. L. See Skutt, H. R.
 Shigo, A. L. See Tattar, T. A.
 Skutt, H. R., Shigo, A. L., and Lessard, R. A. Detection of discolored and decayed wood in living trees using a pulsed electric current, 54–56.
- Smith, J. H. G. Persistence, size, and weight of needles on Douglas-fir and western hemlock branches,
- Smith, R. S., and Ofosu-Asiedu, A. Distribution of thermophilic and thermotolerant fungi in a spruce-pine chip pile, 16-26.
- Stafford, L. O., and Bell, S. Biomass of fine roots in a white spruce plantation, 169-172.
- Stanton, C. R. See Golding, D. L.
 Steucek, G. L., and Kellogg, R. M. The influence of a stem discontinuity on xylem development in Norway spruce, Picea abies, 217-222.
- Strang, R. M. Ecology and land-use of the barrens of western Nova Scotia, 276-290.
- Strand, R. F. See Heilman, P. E. Tattar, T. A., Shigo, A. L., and Chase, T. Relationship between the degree of resistance to a pulsed electric current and wood in progressive stages of discoloration and decay in living trees, 236-243. Telfer, E. S. Forage yield and browse utilization on logged areas in New Brunswick, 346-350.
- Tregunna, E. B. See Mellor, G. E. Troughton, G. E., and Manville, J. F. Lignin utilization. I. Kinetics of base-catalyzed condensation
- reactions of lignin model compounds, 271-275. van der Kamp, B. J. See Richardson, K. S.
- Van Wagner, C. E. Duff consumption by fire in eastern pine stands, 34-39.
- Webber, B. See Weetman, G. F
- Weetman, G. F., and Webber, B. The influence of wood harvesting on the nutrient status of two spruce stands, 351-369.
- Weir, R. J. See Zobel, B. J.
- Wellwood, R. W. See Sastry, C. B. R.
- Whitney, R. D., Bohaychuk, W. P., and Briant, M. A. Mycorrhizae of jack pine seedlings in Sas-katchewan and Manitoba, 228-235.
- Winget, C. H. See Bernier, B.
- Yeatman, C. W. See Clements, J. R. Zaerr, J. B. Early detection of dead plant tissue, 105-110.
- Zobel, B. J., Weir R. J., and Jett, J. B. Breeding methods to produce progeny for advanced-generation selection and to evaluate parent trees, 339-345.
- Zoltai, S. C. Palsas and peat plateaus in central Manitoba and Saskatchewan, 291-302.



CANADIAN JOURNAL OF FOREST RESEARCH. **VOLUME 2, 1972**

SUBJECT INDEX

This is a permuted term index. The terms are arranged linearly, primary terms first, followed by secondary terms after the semicolon. Each primary term is used once to head an entry. Secondary terms are informative but not sufficiently specific to head entries. In an entry, a few terms by themselves may be ambiguous, but a reading of all the terms should convey the content of the paper, as illustrated in the following examples.

cutting, Pinus strobus; vegetative propagation. 2, 103-107 (Walker and Ames) cutting, Pinus strobus; logging. 2, 567-570 (Clark et al.)

The index terms are followed by the volume number, inclusive page numbers, and authors' names, in that order.

Ables balsamea, ammonia, fertilizer, urea; loss, volatilization. 2, 59-62 (Bernier et al.)

bark content, Picea mariana, sapwood content, weight scaling; green density, moisture content. 2, 427-433 (Pnevmaticos et al.)

Abies lasiocarpa, forest floor, organic matter, Picea engelmannii, Pinus contorta, water storage; Alberta, Marmot Creek. 2, 1-6 (Golding and Stanton)

germination, organic horizon, *Picea engelmannii*, *Pinus contorta*, *Pseudotsuga menziesii*, soils; lethal effects, overwintering. 2, 179-184 (Daniel and Schmidt) abscission, ethylene, *Quercus alba*. 2, 492-495 (Chaney and Leopold)

acciospore, canker, Cronartium comandrae, Pinus contorta, spore release; periodicity, weather factors. 2, 78–88 (Powell)

Ailanthus altissima, Fraxinus pennsylvanica, periderm, Pinus resinosa, Robinia pseudoacacia; ontogeny, seedlings. 2, 135-143 (Borger and Kozlowski)

Alees alees americana, browsing, deer, forage, hare, Lepus americanus struthopus, moose, Odocoileus virginianus borealis; age of logged areas, New Brunswick. 2, 346–350 (Telfer) allometry, biomass, dimensional analysis; logarithmic transformation, regression. 2, 49–53 (Basker-

ammonia, Abies balsamea, fertilizer, urea; loss, volatilization. 2, 59-62 (Bernier et al.)

Arceuthobium americanum, dwarf mistletoe, Pinus contorta; control, epidemiology, population dynamics. 2, 413-416 (Muir)

Arceuthobium tsugense, dwarf mistletoe, Tsuga heterophylla; height growth. 2, 313-316 (Richardson and van der Kamp)

bark content, Abies balsamea, Picea mariana, sapwood content, weight scaling; green density, moisture content. 2, 427-433 (Pnevmaticos et al.)

barrens, ecology, Gaylussacia baccata, pollen analysis, recreation, soils; Nova Scotia. 2, 276-290 (Strang)

biomass, allometry, dimensional analysis; logarithmic transformation, regression. 2, 49-53 (Baskerville)

dry matter production, leaf area index, Populus tremuloides, rotation (short). 2, 27-33 (Pollard) needles, Pseudotsuga menziesii, Tsuga heterophylla; age, crown position, forest fuel. 2, 173-

178 (Smith) Picea glauca, roots; fine roots, plantation. 2, 169-172 (Safford and Bell)

bole form, diameter growth, growth layers, height growth, Pinus banksiana, stem analysis; crown, ring sequences. 2, 392-406 (Shea and Armson)

fertilization, growth layer, Pseudotsuga menziesii, urea; vertical profile. 2, 95-97 (Mitchell and Kellogg) Picea abies, xylem; mechanistic hypothesis, stem discontinuity. 2, 217-222 (Steucek and

Kellogg) breeding, genetics, selection; North Carolina State University - Industry Cooperative Tree Improve-

ment Program, tester design. 2, 339-345 (Zobel et al.) browsing, Alces alces americana, deer, forage, hare, Lepus americanus struthopus, moose, Odocoileus

virginianus borealis; age of logged areas, New Brunswick. 2, 346-350 (Telfer) deer, Odocoileus hemionus columbianus, Pseudotsuga menziesii; digestibility, genotype, pre-ference. 2, 250-255 (Radwan)

bud morphology, cone prediction, Picea glauca, sampling; ovulate bud counts. 2, 460-466 (Eis and Inkster)

buds, frost, Picea glauca; damage, spring. 2, 62-63 (Clements et al.)

callus, Pseudotsuga menziesii, root initiation, stem cuttings; anatomy, vegetative propagation. 2, 121-134 (Heaman and Owens) canker, aeciospore, Cronartium comandrae, Pinus contorta, spore release; periodicity, weather fac-

tors. 2, 78-88 (Powell)

chips, fungi, storage; pulpwood, temperature. 2, 16-26 (Smith and Ofosu-Asiedu)

chloroplast, Populus deltoides, ultrastructure, virus; leaf tissue, poplar mosaic virus. 2, 308-312 (Navratil and Bover)

cone induction, fertilization, mineral nutrition, Pseudotsuga menziesii; nitrogen, time of treatment. 2, 317-326 (Ebell) cone prediction, bud morphology, Picea glauca, sampling; ovulate bud counts. 2, 460-466 (Eis and

Inkster) cone production, cuttings, Tsuga heterophylla; vegetative propagation. 2, 370-371 (Piesch)

fertilization, mineral nutrition, Pseudotsuga menziesii, stem growth; frequency, rate. 2, 327-338 (Ebell)

container planting, peat, Pinus contorta; extruded peat cylinders, flexible plastic tubing. 2, 479-486 (Mitchell et al.) coppice, Populus trichocarpa, rotation (short); fertilizers, spacing and fertilization, triazine herbicides,

total tree harvest. 2, 456-459 (Heilman et al.)

Cronartium comandrae, aeciospore, canker, Pinus contorta, spore release; periodicity, weather factors. 2, 78-88 (Powell) Cronartium ribicola, damage, Pinus armandii, resistance, rust, wound periderm. 2, 303-307 (Hoff and

McDonald)

crown, grazing, productivity; aerial photographs, herbage. 2, 185-189 (Dodd et al.)

height, stand density; Krajicek's crown competition factor, Wilson's height-stocking concept. 2, 441-447 (Honer)

cuttings, cone production, Tsuga heterophylla; vegetative propagation, 2, 370-371 (Piesch)

damage, Cronartium ribicola, Pinus armandii, resistance, rust, wound periderm. 2, 303-307 (Hoff and McDonald)

foliar analysis, Pinus strobus, salt; road deicing salt. 2, 244-249 (Hall et al.)

insect, Picea glauca, Picea mariana, Rhabdophaga swainei; crowns, height growth. 2, 69-72 (Cerezke) Pseudotsuga menziesii; dead tissue, early detection, electrical impedance, leaf. 2, 105-110

(Zaerr)

decay, electric current; detection, ions, living trees, moisture content, pulsed, resistance. 2, 236-243 (Tattar et al.) electric current; detection, living trees, pulsed, resistance, technique. 2, 54-56 (Skutt et al.)

deer, Alces alces americana, browsing, forage, hare, Lepus americanus struthopus, moose, Odocoileus virginianus borealis; age of logged areas, New Brunswick. 2, 346-350 (Telfer) browsing, Odocoileus hemionus columbianus, Pseudotsuga menziesii; digestibility, genotype, preference. 2, 250-255 (Radwan)

diameter growth, bole form, growth layers, height growth, *Pinus banksiana*, stem analysis; crown, ring sequences. 2, 392-406 (Shea and Armson) dimensional analysis, allometry, biomass; logarithmic transformation, regression. 2, 49-53 (Basker-

dispersion, Picea mariana, sampling; range, statistics, subgroups. 2, 40-44 (Heger)

dormancy, germination, permeability, *Pinus taeda*, respiration, seedcoat, stratification, water inhibition. 2, 7-10 (Barnett) dry matter production, biomass, leaf area index, Populus tremuloides, rotation (short). 2, 27-33

(Pollard)

dry weight, leaf area, nitrogen, Pinus contorta, Pseudotsuga menziesii, Tsuga heterophylla; growth chamber. 2, 377-379 (Mellor and Tregunna) nitrogen, nutrition, Picea glauca, Pinus contorta, sugar content; environmentally controlled

seedlings. 2, 434-440 (Etter)

duff, forest fire, Pinus banksiana, Pinus resinosa, Pinus strobus. 2, 34-39 (Van Wagner)

dwarf mistletoe, Arceuthobium americanum, Pinus contorta; control, epidemiology, population dyna mics. 2, 413-416 (Muir) Arceuthobium tsugense, Tsuga heterophylla; height growth. 2, 313-316 (Richardson and van

der Kamp)

earlywood-latewood, mineral nutrition, nitrogen, photosynthesis, Pseudotsuga menziesii, water; diameter growth, leaf growth. 2, 467-478 (Brix)

ecology, barrens, Gaylussacia baccata, pollen analysis, recreation, soils; Nova Scotia. 2, 276-290

electric current, decay; detection, ions, living trees, moisture content, pulsed, resistance. 2, 236-243 (Tattar et al.)

decay; detection, living trees, pulsed, resistance, technique. 2, 54-56 (Skutt et al.)

electrophoresis, germination, nucleotides, Pinus banksiana, ribonucleic acids; 32P labeling. 2, 206-216 (Durzan et al.)

equations, metric system, taper, volume; conversion. 2, 372-374 (Demaerschalk) ethylene, abscission, Quercus alba. 2, 492-495 (Chaney and Leopold)

fertilization, bole form, growth layer, Pseudotsuga menziesii, urea; vertical profile. 2, 95-97 (Mitchell and Kellogg)

cone induction, mineral nutrition, Pseudotsuga menziesii; nitrogen, time of treatment. 2, 317-326 (Ebell)

cone production, mineral nutrition, Pseudotsuga menziesii, stem growth; frequency, rate. 2, 327-338 (Ebell) nitrogen, *Pséudotsuga menziesii*, tracheids, wood properties; alpha-cellulose, quartz ultramicrobalance. **2**, 417-426 (Sastry *et al.*)

fertilizer, Abies balsamea, ammonia, urea; loss, volatilization. 2, 59-62 (Bernier et al.) flowering, Prunus serotina; altitude, Appalachians, precocious. 2, 57-58 (Farmer and Barnett) foliar analysis, damage, Pinus strobus, salt; road deicing salt. 2, 244-249 (Hall et al.)

— mineral constituents, nutrients, Pinus banksiana; chemical composition, crown position, leaf age, macroelements, microelements. 2, 89-94 (Morrison)

food reserves, Picea engelmannii, winter damage; potted seedlings. 2, 489-492 (Ronco)

forage, Alces alces americana, browsing, deer, hare, Lepus americanus struthopus, moose, Odocoileus virginianus borealis; age of logged areas, New Brunswick. 2, 346-350 (Telfer) forest fire, duff, Pinus banksiana, Pinus resinosa, Pinus strobus. 2, 34-39 (Van Wagner)

forest floor, Abies lasiocarpa, organic matter, Picea engelmannii, Pinus contorta, water storage; Alberta,

Marmot Creek. 2, 1-6 (Golding and Stanton) Fraxinus pennsylvanica, Ailanthus altissima, periderm, Pinus resinosa, Robinia pseudoacacia; ontogeny, seedlings. 2, 135-143 (Borger and Kozlowski)

light, periderm, Pinus resinosa, Robinia pseudoacacia, xylem; seedlings. 2, 198-205 (Borger and Kozlowski)

periderm, Pinus resinosa, Robinia pseudoacacia, seedlings, temperature, xylem. 2, 190-197 (Borger and Kozlowski)

periderm, water deficit, xylem; polyethylene glycol, seedlings. 2, 144-151 (Borger and Kozlowski)

frost, buds, Picea glauca; damage, spring. 2, 62-63 (Clements et al.)

fungi, chips, storage; pulpwood, temperature. 2, 16-26 (Smith and Ofosu-Asiedu)

Gaylussacia baccata, barrens, ecology, pollen analysis, recreation, soils; Nova Scotia. 2, 276-290 (Strang)

genetics, breeding, selection; North Carolina State University – Industry Cooperative Tree Improvement Program, tester design. 2, 339-345 (Zobel et al.)

hybrids, peroxidase isoenzymes, Ulmus; electrophoresis. 2, 264-270 (Feret)

germination, Abies lasiocarpa, organic horizon, Picea engelmannii, Pinus contorta, Pseudotsuga menziesii, soils; lethal effects, overwintering. 2, 179-184 (Daniel and Schmidt)

dormancy, permeability, Pinus taeda, respiration, seedcoat, stratification, water inhibition.

2, 7-10 (Barnett) electrophoresis, nucleotides, Pinus banksiana, ribonucleic acids; 32P labeling. 2, 206-216 (Durzan et al.) Pseudotsuga menziesii, repellent, rodent, Tsuga heterophylla; seed coating. 2, 256-263 (Ed-

wards and Olsen)

grafts, Pseudotsuga menziesii, root grafts, Thuja plicata, Tsuga heterophylla; anatomy, growth, living stumps, translocation. 2, 111-120 (Eis)

grazing, crown, productivity; aerial photographs, herbage. 2, 185-189 (Dodd et al.)

growth layers, bole form, diameter growth, height growth, Pinus banksiana, stem analysis; crown, ring sequences. 2, 392-406 (Shea and Armson) bole form, fertilization, Pseudotsuga menziesii, urea; vertical profile. 2, 95-97 (Mitchell and

Kellogg)

guaiacol, lignin, phenolic resin; activation energies, condensation reactions, dimerization, gas-liquid chromatography. 2, 271-275 (Troughton and Manville)

hare, Alces alces americana, browsing, deer, forage, Lepus americanus struthopus, moose, Odocoileus virginianus borealis; age of logged areas, New Brunswick. 2, 346-350 (Telfer)

harvesting, mineral constituents, nutrients; full-tree and tree-length logging, nutrient inputs, Quebec, site differences, spruce pulpwood stands. 2, 351-369 (Weetman and Webber)

nutrient cycling; bole and branch harvesting, mixed hardwoods, site, Wisconsin. 2, 407-412 (Boyle and Ek)

(Whitney et al.)

height, crown, stand density; Krajicek's crown competition factor, Wilson's height-stocking concept. 2, 441-447 (Honer) height growth, bole form, diameter growth, growth layers, Pinus banksiana, stem analysis; crown, ring sequences. 2, 392-406 (Shea and Armson)

humus layer, organic horizon, Thuja plicata, Tsuga heterophylla; chemical variability. 2, 487-489 (Lowe)

hybrids, genetics, peroxidase isoenzymes, Ulmus; electrophoresis. 2, 264-270 (Feret)

introgression, Picea mariana, Picea rubens; hybrid population, New Brunswick, site. 2, 381-391 (Manley)

Hylobius warreni, Pinus contorta, radial increment, resin ducts, wounds. 2, 11-15 (Cerezke) inoculation, mycorrhizae, Pinus banksiana, transplanting; Manitoba, Saskatchewan. 2, 228-235 insect, damage, Picea glauca, Picea mariana, Rhabdophaga swainei; crowns, height growth. 2, 69-72 (Cerezke)

introgression, hybrids, Picea mariana, Picea rubens; hybrid populations, New Brunswick, site. 2, 381-391 (Manley)

inventory; fixed and variable costs, precision, small forest. 2, 45–48 (Bonnor)

leaf area, dry weight, nitrogen, Pinus contorta, Pseudotsuga menziesii, Tsuga heterophylla; growth chamber. 2, 377-379 (Mellor and Tregunna)

leaf production, Populus balsamifera × P. tristis, Populus tacamahaca × P. deltoides, specific gravity; bark/wood ratio, clones, intensive culture, physiology, root sprouts. 2, 98-104 (Larson and Isebrands)

leaf area index, biomass, dry matter production, Populus tremuloides, rotation (short), 2, 27-33

leaf production, leaf area, Populus balsamifera × P. tristis, Populus tacamahaca × P. deltoides, specific gravity; bark/wood ratio, clones, intensive culture, physiology, root sprouts. 2, 98-104 (Larson and Isebrands)

pus americanus struthopus, Alces alces americana, browsing, deer, forage, hare, moose, Odocoileus virginianus borealis; age of logged areas, New Brunswick. 2, 346-350 (Telfer) Lepus americanus struthopus,

litter fall, nutrient cycling, nutrition, Pinus banksiana; biogeochemical cycling, stemflow, throughflow. 2, 448-455 (Foster and Gessel)

light, Fraxinus pennsylvanica, periderm, Pinus resinosa, Robinia pseudoacacia, xylem; seedlings 2, 198-205 (Borger and Kozlowski)

lignin, guaiacol, phenolic resin; activation energies, condensation reactions, dimerization, gas-liquid chromatography. 2, 271-275 (Troughton and Manville)

metric system, equations, taper, volume; conversion, 2. 372-374 (Demaerschalk)

mineral constituents, foliar analysis, nutrients, Pinus banksiana; chemical composition, crown position, leaf age, macroelements, microelements. 2, 89-94 (Morrison)

harvesting, nutrients; full-tree and tree-length logging, nutrient inputs, Quebec, site differences, spruce pulpwood stands. 2, 351-369 (Weetman and Webber) mineral nutrition, cone induction, fertilization, Pseudotsuga menziesii; nitrogen, time of treatment.

2, 317-326 (Ebell) cone production, fertilization, Pseudotsuga menziesii, stem growth; frequency, rate. 2, 327-

338 (Ebell) earlywood-latewood, nitrogen, photosynthesis, *Pseudotsuga menziesii*, water; diameter growth, leaf growth. 2, 467-478 (Brix)

moose, Alces alces americana, browsing, deer, forage, hare, Lepus americanus struthopus, Odocoileus virginianus borealis; age of logged areas, New Brunswick. 2, 346-350 (Telfer)

mycorrhizae, inoculation, Pinus banksiana, transplanting; Manitoba, Saskatchewan. 2, 228-235 (Whitney et al.)

needle area, photo-electric measurement, Pseudotsuga menziesii; technique. 2, 374-376 (Balderston) needles, biomass, Pseudotsuga menziesii, Tsuga heterophylla; age, crown position, forest fuel. 2, 173-178 (Smith)

nitrogen, earlywood-latewood, mineral nutrition, photosynthesis, Pseudotsuga menziesii, water;

diameter growth, leaf growth. 2, 467–478 (Brix)
dry weight, leaf area, Pinus contorta, Pseudotsuga menziesii, Tsuga heterophylla; growth chamber. 2, 377-379 (Mellor and Tregunna)

dry weight, nutrition, Picea glauca, Pinus contorta, sugar content; environmentally controlled seedlings. 2, 434-440 (Etter)

fertilization, *Pseudotsuga menziesii*, tracheids, wood properties; alpha-cellulose, quartz ultramicrobalance. 2, 417-426 (Sastry et al.)

nucleotides, electrophoresis, germination, Pinus banksiana, ribonucleic acids; 32P labeling. 2, 206-216 (Durzan et al.) nutrient cycling, harvesting; bole and branch harvesting, mixed hardwoods, site, Wisconsin. 2,

407-412 (Boyle and Ek) litter fall, nutrition, Pinus banksiana; biogeochemical cycling, stemflow, throughflow. 2, 448-455 (Foster and Gessel)

nutrients, foliar analysis, mineral constituents, Pinus banksiana; chemical composition, crown position, leaf age, macroelements, microelements. 2, 89-94 (Morrison)

harvesting, mineral constituents; full-tree and tree-length logging, nutrient inputs, Quebec, site differences, spruce pulpwood stands. 2, 351-369 (Weetman and Webber)

nutrition, dry weight, nitrogen, Picea glauca, Pinus contorta, sugar content; environmentally controlled seedlings. 2, 434-440 (Etter) litter fall, nutrient cycling, Pinus banksiana; biogeochemical cycling, stemflow, throughflow.

2, 448-455 (Foster and Gessel)

Odocoileus hemionus columbianus, browsing, deer, Pseudotsuga menziesii; digestibility, genotype, preference. 2, 250-255 (Radwan)
Odocoileus virginianus borealis, Alces alces americana, browsing, deer, forage, hare, Lepus americanus

struthopus, moose; age of logged areas, New Brunswick. 2, 346-350. (Telfer)

organic horizon, Abies lasiocarpa, germination, Picea engelmannii, Pinus contorta, Pseudotsuga mensiesii, soils; lethal effects, overwintering. 2, 179-184 (Daniel and Schmidt)

humus layer, Thuja plicata, Tsuga heterophylla; chemical variability. 2, 487-489 (Lowe) organic matter, Abies lasiocarpa, forest floor, Picea engelmannii, Pinus contorta, water storage; Alberta, Marmot Creek. 2, 1-6 (Golding and Stanton)

palsas, peat, permafrost; development, Manitoba, Saskatchewan. 2, 291-302 (Zoltai)

peat, container planting, Pinus contorta; extruded peat cylinders, flexible plastic tubing. 2, 479-486 (Mitchell et al.)

palsas, permafrost; development, Manitoba, Saskatchewan. 2, 291-302 (Zoltai)

periderm, Ailanthus altissima, Fraxinus pennsylvanica, Pinus resinosa, Robinia pseudoacacia; ontogeny, seedlings. 2, 135-143. (Borger and Kozlowski) Fraxinus pennsylvanica, light, Pinus resinosa, Robinia pseudoacacia, xylem; seedlings. 2,

198-205 (Borger and Kozlowski)

Fraxinus pennsylvanica, Pinus resinosa, Robinia pseudoacacia, seedlings, temperature, xylem. 2, 190-197 (Borger and Kozlowski)

Fraxinus pennsylvanica, water deficit, xylem; polyethylene glycol, seedlings. 2, 144-151

(Borger and Kozlowski) permafrost, palsas, peat; development, Manitoba, Saskatchewan. 2, 291-302 (Zoltai)

permeability, dormancy, germination, *Pinus taeda*, respiration, seedcoat, stratification, water inhibition. 2, 7-10 (Barnett) peroxidase isoenzymes, genetics, hybrids, *Ulmus*; electrophoresis. 2, 264–270 (Feret) phenolic resin, guaiacol, lignin; activation energies, condensation reactions, dimerization gas-liquid

chromatography. 2, 271-275 (Throughton and Manville)

photo-electric measurement, needle area, Pseudotsuga menziesii; technique. 2, 374-376 (Balderston) photosynthesis, earlywood-latewood, mineral nutrition, nitrogen, Pseudotsuga menziesii, water; diameter growth, leaf growth. 2, 467-478 (Brix) Picea abies, bole form, xylem; mechanistic hypothesis, stem discontinuity. 2, 217-222 (Steucek and

Picea engelmannii, Abies lasiocarpa, forest floor, organic matter, Pinus contorta, water storage; Alberta, Marmot Creek. 2, 1-6 (Golding and Stanton)

Abies lasiocarpa, germination, organic horizon, Pinus contorta, Pseudotsuga menziesii, soils; lethal effects, overwintering. 2. 179-184 (Daniel and Schmidt)

food reserves, winter damage; potted seedlings. 2, 489-492 (Ronco)

Picea glauca, biomass, roots; fine roots, plantation, 2, 169-172 (Safford and Bell)

bud morphology, cone prediction, sampling; ovulate bud counts. 2, 460-466 (Eis and Inkster) buds, frost; damage, spring. 2, 62-63 (Clements et al.)

damage, insect, Picea mariana, Rhabdophaga swainei; crowns, height growth. 2, 69-72

— dry weight, nitrogen, nutrition, *Pinus contorta*, sugar content, environmentally controlled seedlings. 2, 434-440 (Etter)

Picea mariana, Abies balsamea, bark content, sapwood content, weight scaling; green density, moisture content. 2, 427-433 (Pnevmaticos et al.) damage, insect, Picea glauca, Rhabdophaga swainei; crowns, height growth. 2, 69-72 (Cerezke)

dispersion, sampling; range, statistics, subgroups. 2, 40-44 (Heger)

hybrids, introgression, Picea rubens; hybrid populations, New Brunswick, site. 2, 381-391 (Manley) Picea rubens, hybrids, introgression, Picea mariana; hybrid populations, New Brunswick, site. 2, 381-391 (Manley)

Picea sitchensis, root pruning, root regeneration, Tsuga heterophylla; nursery practice, time of year. 2, 223-227 (Eis and Long) Cronartium ribicola, damage, resistance, rust, wound periderm. 2, 303-307 (Hoff

and McDonald)

Pinus banksiana, bole form, diameter growth, growth layers, height growth, stem analysis; crown, ring sequences. 2, 392-406 (Shea and Armson)

duff, forest fire, Pinus resinosa, Pinus strobus. 2, 34-39 (Van Wagner)

electrophoresis, germination, nucleotides, ribonucleic acids; ³²P labeling. 2, 206-216 (Durzan et al.) foliar analysis, mineral constituents, nutrients; chemical composition, crown position, leaf

age, macroelements, microelements. 2, 89-94 (Morrison)

inoculation, mycorrhizae, transplanting; Manitoba, Saskatchewan. 2, 228-235 (Whitney et al.) litter fall, nutrient cycling, nutrition; biogeochemical cycling, stemflow, throughflow. 2, 448-

455 (Foster and Gessel)

Pinus contorta, Abies lasiocarpa, forest floor, organic matter, Picea engelmannii, water storage; Alberta, Marmot Creek. 2, 1-6 (Golding and Stanton)

Abies lasiocarpa, germination, organic horizon, Picea engelmannii. Pseudotsuga menziesii,

soils; lethal effects, overwintering. 2, 179-184 (Daniel and Schmidt) aeciospore, canker, Cronartium comandrae, spore release; periodicity, weather factors. 2, 78-88 (Powell)

Arceuthobium americanum, dwarf mistletoe; control, epidemiology, population dynamics.

2, 413-416 (Muir) container planting, peat; extruded peat cylinders, flexible plastic tubing. 2, 479-486 (Mitchell

- dry weight, leaf area, nitrogen, Pseudotsuga menziesii, Tsuga heterophylla; growth chamber. 2, 377-379 (Mellor and Tregunna)
- dry weight, nitrogen, nutrition, Picea glauca, sugar content; environmentally controlled seedlings. 2, 434-440 (Etter)
- Hylobius warreni, radial increment, resin ducts, wounds. 2, 11-15 (Cerezke)
- Pinus resinosa, Ailanthus altissima, Fraxinus pennsylvanica, periderm, Robinia pseudoacacia; ontogeny, seedlings. 2, 135-143 (Borger and Kozlowski)
- duff, forest fire, Pinus banksiana, Pinus strobus. 2, 34-39 (Van Wagner)
- Fraxinus pennsylvanica, light, periderm, Robinia pseudoacacia, xylem; seedlings. 2, 198-205 (Borger and Kozlowski)
- Fraxinus pennsylvanica, periderm, Robinia pseudoacacia, seedlings, temperature, xylem. 2, 190-197 (Borger and Kozloswski)
- stomatal resistance, water, weed removal; tree growth. 2, 152-159 (Lambert et al.)

 Pinus strobus, damage, foliar analysis, salt; road deicing salt. 2, 244-249 (Hall et al.)

 duff, forest fire, Pinus banksiana, Pinus resinosa. 2, 34-39 (Van Wagner)
- Pinus taeda, dormancy, germination, permeability, respiration, seedcoat, stratification, water inhibition. 2, 7-10 (Barnett)
- platform; apparatus, crown sampling. 2, 166-167 (Talmon-de L'Armee)
- pollen analysis, barrens, ecology, Gaylussacia baccata, recreation, soils; Nova Scotia. 2, 276-290
- Populus balsamifera × P. tristis, leaf area, leaf production, Populus tacamahaca × P. deltoides, specific gravity; bark/wood ratio, clones, intensive culture, physiology, root sprouts. 2, 98-104 (Larson and Isebrands)
- Populus deltoides, chloroplast, ultrastructure, virus; leaf tissue, poplar mosaic virus. 2, 308-312 (Navratil and Boyer)
- Populus grandidentata, stemflow; equation, multi-storied community. 2, 160-165 (Clements)
 Populus tacamahaca × P. deltoides, leaf area, leaf production, Populus balsamifera × P. tristis, specific gravity; bark/wood ratio, clones, intensive culture, physiology, root sprouts. 2, 98-104
- (Larson and Isebrands) Populus tremuloides, biomass, dry matter production, leaf area index, rotation (short). 2, 27-33 (Pollard)
- Populus trichocarpa, coppice, rotation (short); fertilizers, spacing and fertilization, triazine herbicides, total tree harvest. 2, 456-459 (Heilman et al.)
- productivity, crown, grazing; aerial photographs, herbage. 2, 185-189 (Dodd et al.)
- Prunus serotina, flowering; altitude, Appalachians, precocious. 2, 57-58 (Farmer and Barnett)

 Pseudotsuga menziesii, Abies lasiocarpa, germination, organic horizon, Picea engelmannii, Pinus contorta, soils; lethal effects, overwintering. 2, 179-184 (Daniel and Schmidt)

 biomass, needles, Tsuga heterophylla; age, crown position, forest fuel. 2, 173-178 (Smith)

 bole form, fertilization, growth layer, urea; vertical profile. 2, 95-97 (Mitchell and Kellogg)
- browsing, deer, Odocoileus hemionus columbianus; digestibility, genotype, preference. 2, 250-255 (Radwan) callus, root initiation, stem cuttings; anatomy, vegetative propagation. 2, 121-134 (Heaman and Owens)
- cone induction, fertilization, mineral nutrition; nitrogen, time of treatment. 2, 317-326 (Ebell)
- cone production, fertilization, mineral nutrition, stem growth; frequency, rate. 2, 327-338
- damage; dead tissue, early detection, electrical impedance, leaf. 2, 105-110 (Zaerr)
- dry weight, leaf area, nitrogen, Pinus contorta, Tsuga heterophylla; growth chamber. 2,
- 377-379 (Mellor and Tregunna) earlywood-latewood, mineral nutrition, nitrogen, photosynthesis, water; diameter growth,
- leaf growth. 2, 467-478 (Brix) fertilization, nitrogen, tracheids, wood properties; alpha-cellulose, quartz ultramicrobalance. 2, 417-426 (Sastry et al.)
- germination, repellent, rodent, Tsuga heterophylla; seed coating. 2, 256-263 (Edwards and
- grafts, root grafts, Thuja plicata, Tsuga heterophylla; anatomy, growth, living stumps, translocation. 2, 111-120 (Eis)
- needle area, photo-electric measurement; technique. 2, 374-376 (Balderston)

Quercus alba, abscission, ethylene. 2, 492-495 (Chaney and Leopold)

- radial increment, Hylobius warreni, Pinus contorta, resin ducts, wounds. 2, 11-15 (Cerezke) recreation, barrens, ecology, Gaylussacia baccata; soils; Nova Scotia. 2, 276-290 (Strang)
- repellent, germination, Pseudotsuga menziesii, rodent, Tsuga heterophylla; seed coating. 2, 256-263 (Edwards and Olsen)
- resin ducts, Hylobius warreni, Pinus contorta, radial increment, wounds. 2, 11-15 (Cerezke)
- resistance, Cronartium ribicola, damage, Pinus armandii, rust, wound periderm. 2, 303-307 (Hoff and McDonald)
- respiration, dormancy, germination, permeability, Pinus taeda, seedcoat, stratification, water inhibition. 2, 7-10 (Barnett)
- Rhabdophaga swainei, damage, insect, Picea glauca, Picea mariana; crowns, height growth. 2 69-72 (Cerezke)

ribonucleic acids, electrophoresis, germination, nucleotides, Pinus banksiana; 32P labeling. 2, 206-216 (Durzan et al.)

Robinia pseudoacacia, Ailanthus altissima, Fraxinus pennsylvanica, periderm, Pinus resinosa; ontogeny, seedlings. 2, 135-143 (Borger and Kozlowski)

Fraxinus pennsylvanica, light, periderm, Pinus resinosa, xylem; seedlings. 2, 198-205 (Borger Fraxinus pennsylvanica, periderm, Pinus resinosa, seedlings, temperature, xylem. 2, 190-197

(Borger and Kozlowski)

rodent, germination, Pseudotsuga menziesii, repellent, Tsuga heterophylla; seed coating. 2, 256-263 (Edwards and Olsen)

root grafts, grafts, Pseudotsuga menziesii, Thuja plicata, Tsuga heterophylla; anatomy, growth,

living stumps, translocation. 2, 111-120 (Eis) root initiation, callus, Pseudotsuga menziesii, stem cuttings; anatomy, vegetative propagation. 2, 121-134 (Heaman and Owens)

root pruning, Picea sitchensis, root regeneration, Tsuga heterophylla; nursery practice, time of year.

2, 223-227(Eis and Long) root regeneration, Picea sitchensis, root pruning, Tsuga heterophylla; nursery practice, time of year. 2, 223-227 (Eis and Long)

roots, biomass, Picea glauca; fine roots, plantation. 2, 169-172 (Safford and Bell)

rotation (short), biomass, dry matter production, leaf area index, Populus tremuloides. 2, 27-33

coppice, Populus trichocarpa; fertilizers, spacing and fertilization, triazine herbicides, total tree harvest. 2, 456-459 (Heilman et al.) rust, Cronartium ribicola, damage, Pinus armandii, resistance, wound periderm. 2, 303-307 (Hoff and

McDonald)

salt, damage, foliar analysis, Pinus strobus; road deicing salt. 2, 244-249 (Hall et al.)

sampling, bud morphology, cone prediction, Picea glauca; ovulate bud counts. 2, 460-466 (Eis and Inkster)

dispersion, Picea mariana; range, statistics, subgroups. 2, 40-44 (Heger) volume; equations, error, groups, stands, tree. 2, 73-77 (Meng)

sapwood content, Abies balsamea, bark content, Picea mariana, weight scaling; green density, moisture content. 2, 427-433 (Pnevmaticos et al.) seedcoat, dormancy, germination, permeability, Pinus taeda, respiration, stratification, water inhibition. 2, 7-10 (Barnett)

seedlings, Fraxinus pennsylvanica, periderm, Pinus resinosa, Robinia pseudoacacia, temperature, xylem. 2, 190-197 (Borger and Kozlowski)

selection, breeding, genetics; North Carolina State University - Industry Cooperative Tree Im-

provement Program, tester design. 2, 339-345 (Zobel et al.) soils, Abies lasiocarpa, germination, organic horizon, Picea engelmannii, Pinus contorta, Pseudotsuga menziesii; lethal effects, overwintering, 2, 179-184 (Daniel and Schmidt)

barrens, ecology, Gaylussacia baccata, pollen analysis, recreation; Nova Scotia. 2, 276-290

(Strang) spatial distribution; Holgate's new randomness tests, Monte Carlo test. 2, 65-68 (Payandeh)

specific gravity, leaf area, leaf production, Populus balsamifera × P. tristis, Populus tacamahaca × P. deltoides; bark/wood ratio, clones, intensive culture, physiology, root sprouts. 2, 98-104 (Larson and Isebrands)

spore release, acciospore, canker, Cronartium comandrae, Pinus contorta; periodicity, weather factors. 2, 78-88 (Powell)

stand density, crown, height; Krajicek's crown competition factor, Wilson's height-stocking concept. 2, 441-447 (Honer)

stem analysis, bole form, diameter growth, growth layers, height growth, *Pinus banksiana*, crown, ring sequences. 2, 392-406 (Shea and Armson) stem cuttings, callus, *Pseudotsuga menziesii*, root initiation; anatomy, vegetative propagation. 2,

121-134 (Heaman and Owens)

stemflow, Populus grandidentata; equation, multi-storied community. 2, 160-165 (Clements)

stem growth, cone production, fertilization, mineral nutrition, Pseudotsuga menziesii; frequency, rate 2, 327-338 (Ebell)

stomatal resistance, Pinus resinosa, water, weed removal; tree growth. 2, 152-159 (Lambert et al.) storage, chips, fungi; pulpwood, temperature. 2, 16-26 (Smith and Ofosu-Asiedu) stratification, dormancy, germination, permeability, Pinus taeda, respiration, seedcoat, water inhibi-

tion. 2, 7-10 (Barnett)

sugar content, dry weight, nitrogen, nutrition, Picea glauca, Pinus contorta; environmentally controlled seedlings. 2, 434-440 (Etter)

taper, equations, metric system, volume; conversion, 2. 372-374 (Demaerschalk)

temperature, Fraxinus pennsylvanica, periderm, Pinus resinosa, Robinia pseudoacacia, seedlings, xylem. 2, 190-197 (Borger and Kozlowski)

Thuja plicata, grafts, Pseudotsuga menziesii, root grafts, Tsuga heterophylla; anatomy, growth, living stumps, translocation. 2, 111-120 (Eis)

humus layer, organic horizon, Tsuga heterophylla; chemical variability. 2, 487-489 (Lowe)

tracheids, fertilization, nitrogen, Pseudotsuga menziesii, wood properties; alpha-cellulose, quartz ultramicrobalance. 2, 417-426 (Sastry et al.)

transplanting, inoculation, mycorrhizae, Pinus banksiana; Manitoba, Saskatchewan. 2, 228-235 (Whitney et al.)

Tsuga heterophylla, Arceuthobium tsugense, dwarf mistletoe; height growth. 2, 313-316 (Richardson and van der Kamp)

biomass, needles, Pseudotsuga menziesii; age, crown position, forest fuel. 2, 173-178 (Smith) cone production, cuttings; vegetative propagation. 2, 370-371 (Piesch)

dry weight, leaf area, nitrogen, Pinus contorta, Pseudotsuga menziesii, growth chember. 2, 377-379 (Mellor and Tregunna)

germination, Pseudotsuga menziesii, repellent, rodent; seed coating. 2, 256-263 (Edwards and

grafts, Pseudotsuga menziesii, root grafts, Thuja plicata; anatomy, growth, living stumps, translocation. 2, 111-120 (Eis)

humus layer, organic horizon, Thuja plicata; chemical variability. 2, 487-489 (Lowe) Picea sitchensis, root pruning, root regeneration; nursery practice, time of year. 2, 223-227 (Eis and Long)

Ulmus, genetics, hybrids, peroxidase isoenzymes; electrophoresis. 2, 264–270 (Feret) ultrastructure, chloroplast, Populus deltoides, virus; leaf tissue, poplar mosaic virus. 2, 308-312 (Navratil and Boyer)

urea, Abies balsamea, ammonia, fertilizer; loss, volatilization. 2, 59-62 (Bernier et al.)

bole form, fertilization, growth layer, Pseudotsuga menziesii; vertical profile. 2, 95-97 (Mitchell and Kellogg)

virus, chloroplast, Populus deltoides, ultrastructure; leaf tissue, poplar mosaic virus. 2, 308-312 (Navratil and Boyer)

volume, equations, metric system, taper; conversion. 2, 372-374 (Demaerschalk) sampling; equations, error, groups, stands, tree. 2, 73-77 (Meng)

water, earlywood-latewood, mineral nutrition, nitrogen, photosynthesis, Pseudotsuga menziesii; diameter growth, leaf growth. 2, 467-478 (Brix)

Pinus resinosa, stomatal resistance, weed removal; tree growth. 2, 152-159 (Lambert et al.) water deficit, Fraxinus pennsylvanica, periderm, xylem; polyethylene glycol, seedlings. 2, 144-151 (Borger and Kozlowski)

water inhibition, dormancy, germination, permeability, *Pinus taeda*, respiration, seedcoat, stratification. 2, 7-10 (Barnett) water storage, Abies lasiocarpa, forest floor, organic matter, Picea engelmannii, Pinus contorta;

Alberta, Marmot Creek. 2, 1-6 (Golding and Stanton) weed removal, Pinus resinosa, stomatal resistance, water; tree growth. 2, 152-159 (Lambert et al.) weight scaling, Abies balsamea, bark content, Picea mariana, sapwood content; green density, moisture content. 2, 427-433 (Pnevmaticos et al.)

winter damage, food reserves, Picea engelmannii, potted seedlings. 2, 489-492 (Ronco)

wood properties, fertilization, nitrogen, Pseudotsuga menziesii, tracheids, alpha-cellulose, quartz ultramicrobalance. 2, 417-427 (Sastry et al.)

wound periderm, Cronartium ribicola, damage, Pinus armandii, resistance, rust. 2, 303-307 (Hoff and McDonald)

wounds, Hylobius warreni, Pinus contorta, radial increment, resin ducts. 2, 11-15 (Cerezke)

xylem, bole form, Picea abies; mechanistic hypothesis, stem discontinuity. 2, 217-222 (Steucek and Kellogg) Fraxinus pennsylvanica, light, periderm, Pinus resinosa, Robinia pseudoacacia; seedlings. 2,

198-205 (Borger and Kozlowski)

Fraxinus pennsylvanica, periderm, Pinus resinosa, Robinia pseudoacacia, seedlings, temperature, 2, 190-197 (Borger and Kozlowski)

Fraxinus pennsylvanica, periderm, water deficit; polyethylene glycol, seedlings. 2, 144-151 (Borger and Kozlowski)

